“Chromoendoscopy Associated with Endoscopic Laryngeal Surgery for Treatment of HPV Mucosal Lesions (Phase II)”

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INTRODUCTION: Chromoendoscopy is an endoscopic technique which uses a contrast stain to paint the aerodigestive tract mucosal lining followed by an optical assessment to highlighting any epithelial abnormalities. Detailed and high-definition magnified views achieved with the aid of rigid endoscopes can often allow for identification of the tissue type or pathology based upon the pattern uncovered. According to the literature we reviewed, we may have been the first ones to use indigo carmine in the field of otolaryngology. Tiny lesions that usually go overlooked with conventional microlaryngoscopy become visible upon the instillation of indigo carmine and further decreasing the chances of an early lesion postoperative recurrence. Chromoendoscopy, in recurrent respiratory papillomatosis (RRP), helps identify unsuspected intraoperative lesions by clearly enhancing the view of their boundaries and surface type. It is also suitable to assess the presence of residual lesions, if any, after their surgical removal.

OBJECTIVES: To demonstrate the usefulness of chromoendoscopy in RRP in laryngotracheal surgery.

MATERIALS AND METHODS: We used indigo carmine associated with endoscopic laryngeal surgery. Before staining, the mucosa may need to be treated with a mucolytic agent to get rid of excess mucus to boost staining. Rigid suspension laryngoscopes of different proximal and distal diameters were used with chromoendoscopy. Patients underwent chromoendoscopy associated with endoscopic laryngeal surgery under general anesthesia in the O.R.

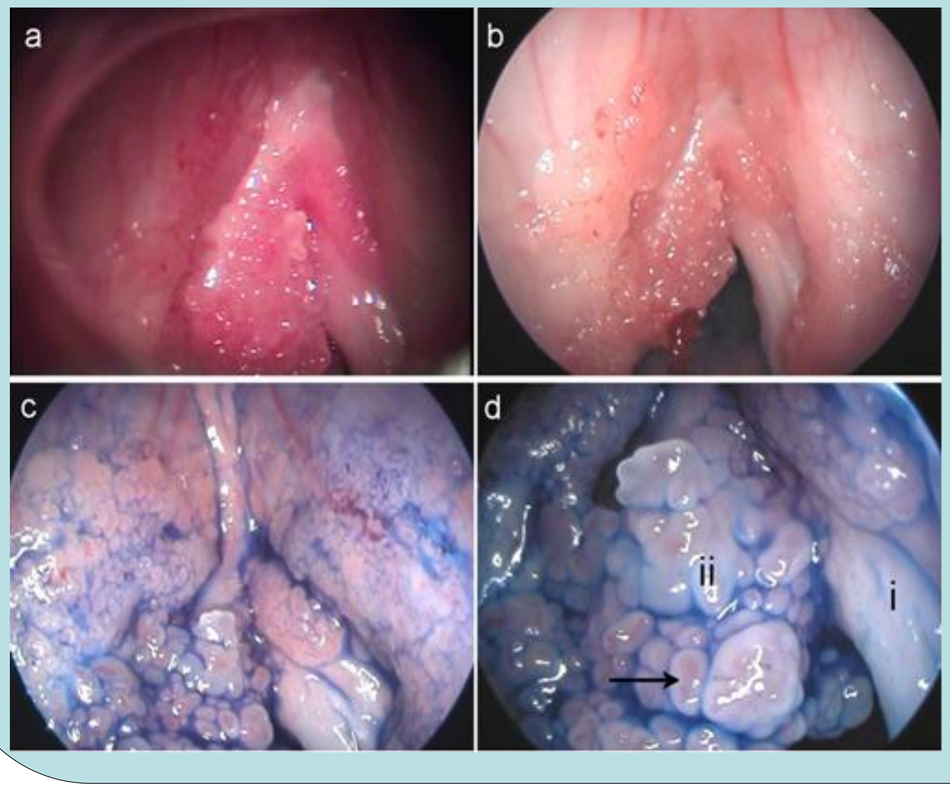

Image 1: Recurrent respiratory papillomatosis (RRP). Microscopy with a 400mm optical zoom lens makes possible the viewing of the larynx only in its vertical axis,(Photo a); this is a wide-angle view of the larynx with a 30 degree telescope, (Photo b); The use of chromoendoscopy allows observing real extent of laryngeal papillomatosis involving difficult to treat areas such as the anterior-commissure infrapetiole region (Photo c). Laryngeal papillomas at a closer look appear to be separate sessile masses, of different sizes, like a blanket covering the endolarynx. Villi and papillary lacunar pattern of the lesion (arrow) can be clearly observed and the difference between the healthy (i) and sick tissue (ii) is easily noted as well, (photo d).

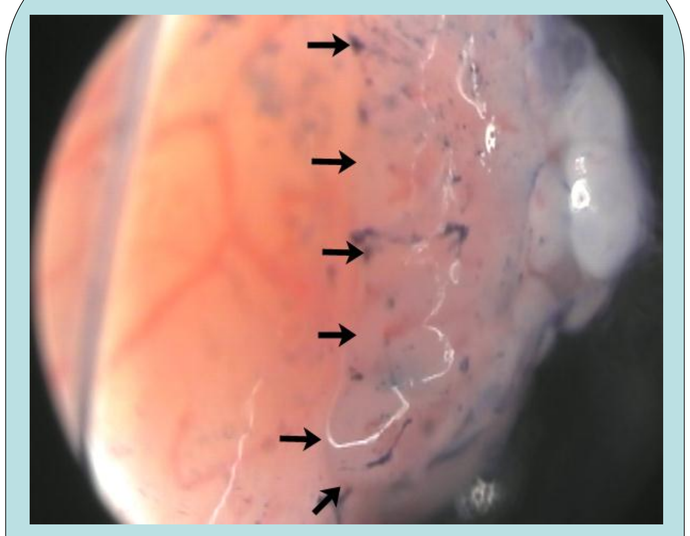

Image 2: Image of endolaryngeal respiratory papillomatosis. A suspected supraglottic lesion is here seen with a 30 degree telescope. (See arrows)
The presence of a papillomatous superficial flat lesion of well-defined boundaries is accurately determined by using indigo carmine(See arrows)

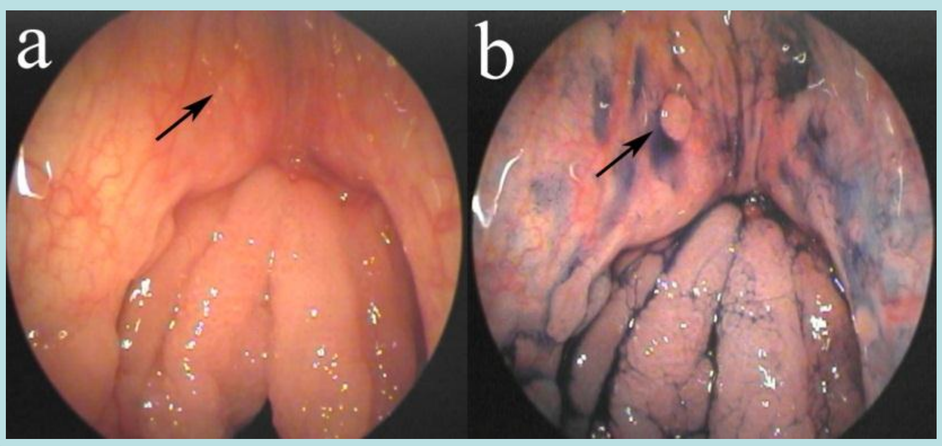

Image 3: View of the mucosal lesion in the anterior supraglottic region that had been overlooked at microlaryngoscopy using a 30 degree telescope (see arrow in photo a).
A small 4 mm wart corresponding to papilloma virus was identified using chromoendoscopy (arrow picture b).

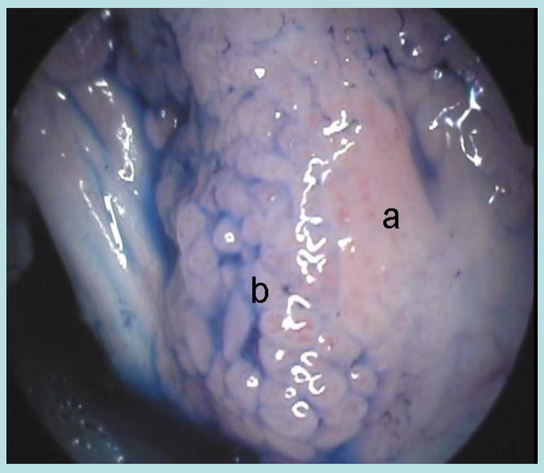

Image 4: Papillomatosis of a ventricle and right ventricular band is shown. Two different stages of the lesion: one is superficial incipient and erythematous (a) and the other one is arborescent at a close view (b)

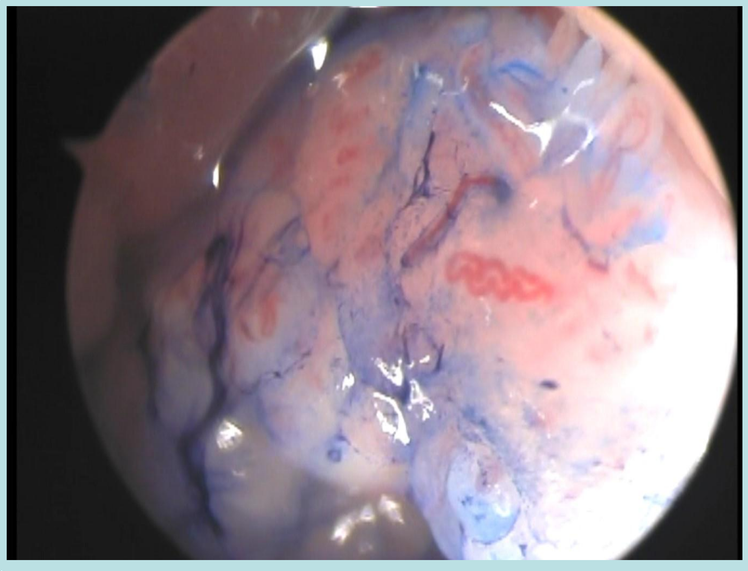

Image 5: Histologically respiratory papillomas are composed of a vascular connective tissue core covered by stratified squamous epithelium with little or no tendency to invade submucosal tissues. Indigo carmine provides excellent visualization of mucosal abnormalities and subepithelial capillaries. We are able to define a papillary pattern on the basis of the vascular connective axis with chromoscopy during surgery.

RESULTS: In this second phase of our research work, this diagnostic technique was applied to eighteen patients with recurrent laryngeal papillomatosis and two patients with suspected carcinoma of the larynx. We were able to optimize the intraoperative diagnosis and reduce the likelihood of the relapse risk in all patients.

CONCLUSION: Chromoendoscopy associated with endoscopic laryngeal surgery is an excellent low-cost intraoperative diagnostic method for the treatment of invasive diseases of the larynx such as laryngeal papillomatosis.

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